NC/QC/YD/W1/NG-04/2017-18/G1 Date: 26-03-2018

## TEST REPORT ON GRANULAR SUBBASE MIX
(GRADATION TEST)

**Sub**: To conduct tests on GSB (with close graded materials, Grade-II) mix.
{Project*: Development and Improvements of roads and drains in Ward no-01 of Yelahanka Sub Division.}
**Ref.**: Material testing/PMC/17-18,
Report Required for: Assistant Executive Engineer,
Yelahanka Sub Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: Sri. Lokesh. R.

## TEST RESULTS

1. **Gradation Test:**
**TABLE 1.1**

| Sieve Size mm | Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation) | Specified Limits as per MoRTH Specifications, V Revision-2013 |
|---|---|---|
| 53.00 | 100.00 | 100 |
| 26.50 | 97.15 | 70-100 |
| 9.50 | 73.60 | 50-80 |
| 4.75 | 48.35 | 40-65 |
| 2.36 | 39.05 | 30-50 |
| 0.425 | 13.80 | 10-15 |
| 0.075 | 4.10 | <5 |

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NC/QC/YD/W1/NG-04/2017-18/W1 Date: 30-03-2018

## TEST REPORT ON WET MIX MACADAM MIX

(GRADATION TEST)

**Sub**: To conduct Gradation test on Wet Mix Macadam (WMM) Mix.
{Project*: Development and Improvements of roads and drains in Ward no-01 of Yelahanka Sub Division.}

**Ref.**: Material testing/PMC/17-18,

Report Required for: Assistant Executive Engineer,
Yelahanka Sub Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: Sri. Lokesh. R.

## TEST RESULTS

**1. Gradation Test:**

**TABLE 1.1**

| Sieve Size mm | Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation) | Specified Limits as per MoRTH Specifications, V Revision-2013 |
|---|---|---|
| 53.00 | 100.00 | 100 |
| 45.00 | 97.45 | 95-100 |
| 26.50 | --- | - |
| 22.40 | 75.15 | 60-80 |
| 11.20 | 53.05 | 40-60 |
| 4.75 | 32.00 | 25-40 |
| 2.36 | 26.10 | 15-30 |
| 0.600 | 19.60 | 8-22 |
| 0.075 | 3.65 | 0-5 |



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NC/QC/YD/W1/NG-04/2017-18/BD1 Date: 23-04-2018

## 1. TEST REPORT ON BITUMEN SAMPLE:

**Sub**: Testing of Bitumen sample VG-30 Grade.
{Project*: Development and Improvements of roads and drains in Ward no-01 of Yelahanka Sub Division }
**Ref.**: Material testing/PMC/17-18,
Report Required for: Assistant Executive Engineer,
Yelahanka Sub Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: Sri. Lokesh. R.
Technical Reference: Ministry of Road Transport and Highways, V Revision, 2013 and IS 73: 1992.

**TABLE 1.1 ;**

| SL No | Details | Test Results | Requirements as per I.S 73 –1992 Specifications |
|---|---|---|---|
| 1. | Penetration at $25^0$ C | **52.30$^0$ C** | Min. 45 |
| 2. | Ductility Value at $25^0$ C | **115.00cm** | 40 |
| 3. | Flash point | **236$^0$ C** | Minimum 220$^0$ C |
| 4. | Softening point | **51.50$^0$ C** | Min. 47 |

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**Page No. 1/1,**

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NC/QC/YD/W1/NG-04/2017-18/CD1 Date: 23-04-2018

## 1. TEST REPORT ON COARSE AGGREGATE:

**Sub**: Testing of Coarse Aggregate used in Dense Graded Bituminous Macadam.
{Project*: Development and Improvements of roads and drains in Ward no-01 of Yelahanka Sub Division.}
**Ref.**: Material testing/PMC/17-18,
Report Required for: Assistant Executive Engineer,
Yelahanka Sub Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: Sri. Lokesh. R.

**TABLE 1.1 ;**

| SL No | Test conducted | Test Results | Tests Conforms to IS 2386( Part I to IV)– 1963 ( Reaffirmed on 2002) & Requirements as per IS 383-1970 & M o R T H Specification, V Revision -2013. |
|---|---|---|---|
| 1. | Aggregate Impact Value | **25.13 %** | Not more than 27.00 % for DBM |
| 2. | Combined Flakiness and Elongation index, % | **27.58%** | Not more than 35.0 % |
| 3. | Water absorption, % | **0.36 %** | Not more than 2.0 % |
| 4. | Specific gravity | **2.51** | ------- |
| 5. | Soundness | **6.18 %** | Max. 12 % in Sodium Sulphate |

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NC/QC/YD/W1/NG-04/2017-18/DBM1 Date: 25-04-2018

**1.TEST REPORT ON BITUMINOUS MIXES :**

**(BITUMEN EXTRACTION TEST & GRADATION TEST)**

**Sub**: To determine the percentage of bitumen and gradation for DBM mix sample.
{Project*: Development and Improvements of roads and drains in Ward no-01 of Yelahanka Sub Division }

**Ref.**: Material testing/PMC/17-18,

Report Required for: Assistant Executive Engineer,
Yelahanka Sub Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: Sri. Lokesh. R.

## TEST RESULTS

A. Type of Construction : **Dense Graded Bituminous Macadam.**

1. The bitumen content obtained after subjecting the sample for Bitumen Extraction test = **4.53 %**

2. **Gradation Test**

**TABLE 1.1**

| Sieve Size, mm | Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation) | Gradation requirement as per Table 500-10 of MORTH Specfications-2013 DBM (Grading - 2) |
|---|---|---|
| 37.5 | 100 | 100 |
| 26.5 | 97.15 | 90-100 |
| 19.0 | 89.25 | 71-95 |
| 13.20 | 76.35 | 56-80 |
| 4.75 | 51.00 | 38-54 |
| 2.36 | 36.50 | 28-42 |
| 0.300 | 18.40 | 7-21 |
| 0.075 | 7.05 | 2-8 |

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NC/QC/YD/W1/NG-04/2017-18/C1 Date: 03-04-2018

## 1. TEST REPORT ON CEMENT:

**Sub**: Testing of 53 Grade Cement Sample (IS 12269-1987)
{Project*: Development and Improvements of roads and drains in Ward no-01 of Yelahanka Sub Division.}
**Ref.**: Material testing/PMC/17-18,
Report Required for: Assistant Executive Engineer,
Yelahanka Sub Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: Sri. Lokesh. R.

### PHYSICAL TESTS ON CEMENT

Brand : ULTRATECH
Grade * : 53,
Type * : O.P.C

**TABLE 1.1:**

| SL No | Name of Test | Test Results | Requirements as per IS 8112-1989 |
|---|---|---|---|
| 1 | Initial setting time | 154 min | Shall not be less than 30 min |
| 2 | Final setting time | 272 min | Shall not be more than 600 min |
| 3 | Fineness (by dry sieving on IS 90 micron sieve) | 1.86 % | Not to exceed 10.0% |
| 4 | Soundness test(by Le-Chatelier's method) | 2.23 mm | Shall not be more than 10 mm |
| 5 | Compressive strength a) 3 days (average of three results) | 29.14 N/Sq mm | Shall not be less than 27 N/Sqmm |

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NC/QC/YD/W1/NG-04/2017-18/PCC1 Date: 03-04-2018

## 1. TESTING OF COARSE AND FINE AGGREGATES:

**Sub**: Testing of Coarse and Fine aggregates to be used for bed concrete.
{Project*: Development and Improvements of roads and drains in Ward no-01 of Yelahanka Sub Division.}

**Ref.**: Material testing/PMC/17-18,

Report Required for: Assistant Executive Engineer,
Yelahanka Sub Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: Sri. Lokesh. R.

### 1. COARSE AGGRGATES TABLE - SIEVE ANALYSIS:

| IS Sieve Size, mm | Percentage passing | Requirements as per IS 383-1970 (Reaffirmed on 2007) % Passing | |
|---|---|---|---|
| | 25 mm Sample | Single size | Graded |
| 40mm | 100.00 | 85-100 | 100 00 |
| 20mm | 98.45 | 0 -20 | 95 - 100 |
| 10mm | 38.10 | 0 -5 | 25 - 55 |
| 4.75mm | 3.75 | ------ | 0 - 10 |

### 2. FINE AGGREGATES TABLE - SIEVE ANALYSIS

| IS Sieve Size, mm | Percentage Passing | Specification as Per IS: 383-1970(Reaffirmed 2002) Percentage Passing | | | Remarks |
|---|---|---|---|---|---|
| | | Zone-I | Zone-II | Zone -III | |
| 04.75 | 98.45 | 90-100 | 90-100 | 90-100 | The Sample Conforms to Grading Zone-II |
| 02.36 | 86.30 | 60-95 | 75-100 | 85-100 | |
| 01.18 | 73.05 | 30-70 | 55-90 | 75-100 | |
| 600.mic | 51,40 | 15-34 | 35-59 | 60-79 | |
| 300.mic | 23.70 | 5-20 | 8-30 | 12-40 | |
| 150.mic | 8.30 | 0-10 | 0-10 | 0-10 | |

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NC/QC/YD/W1/NG-04/2017-18/CB1 Date: 19-04-2018

## 1. TEST REPORT ON CEMENT CONCRETE CUBES:

**Sub**: Testing of Concrete Cubes (for 07days Compressive Strength).
{Project*: Development and Improvements of roads and drains in Ward no-01 of Yelahanka Sub Division.}

**Ref.**: Material testing/PMC/17-18,

Report Required for: Assistant Executive Engineer,
Yelahanka Sub Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: Sri. Lokesh. R.

### RESULTS OF COMPRESSIVE STRENGTH ON CEMENT CONCRETE CUBE SPECIMENS

Dimensions of Specimen : 150 X 150 X 150mm

Grade of Concrete* : $M_{30}$

**TABLE 1.1:**

| Sl No | Location/ Identification* | Date of Casting* | Date of Testing | Age in Days | C/S Area in $mm^2$ | Maximum Load in K.N | Compressive Strength ($N/mm^2$) | Avg. Value |
|---|---|---|---|---|---|---|---|---|
| 1 | 001 | 12-04-18 | 19-04-18 | 07 | 22500 | 555 | 24.67 | **24.15** |
| | 002 | " | " | " | " | 540 | 24.00 | |
| | 003 | " | " | " | " | 535 | 23.78 | |

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